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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/771,260

02/04/2004

Nozomu Tokano

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EXAMINER

ROBERTSON, JEFFREY

ART UNIT

PAPER NUMBER

1712

DATE MAILED: 06/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/771,260

Applicant(s)

TOKANO ET AL.

Examiner

Jeffrey B. Robertson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 04 February 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1 and 26 are rejected under 35 U.S.C. 102(b) as being anticipated by Ohta et al. (U.S. Patent No. 5,641,997).

For claims 1 and 26, Ohta teaches resin sheets containing polysiloxanes and fillers. Synthesis Example 1, col. 21, line 30 through col. 22, line 7. Ohta teaches that inorganic fillers are added and that the fillers are added in an amount of 60 vol %. Ohta teaches preregs in col. 21, line 3.

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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4. Claims 1, 19-22, and 26 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Babcock et al. (U.S. Patent No. 5,340,644).

For claim 1, Babcock teaches preregs containing polysiloxanes and filler. Col. 1, lines 45-68. Babcock teaches that the fillers are inorganic and that the fillers are added in an amount of up to 85% by weight. Col. 6, lines 1-21. For claim 26, here, Babcock teaches that the amount of filler is from 30-60%. It is noted that Babcock teaches amounts of fillers in percent by weight and not percent by volume and as such this rejection has been made under 102/103. It is the examiner's position that the ranges in percent by weight fall within applicant's claims.

For claims 19-22, Babcock discloses that the polysiloxane contains a  $\text{SiO}_{4/2}$  unit that is present in an amount that corresponds to 20 mol %. Col. 2, lines 43-55. Babcock teaches that the polymers are crosslinked. Col. 5, line 40.

5. Claims 1, 19-22, and 26 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Leibfried (U.S. Patent No. 5,451,637).

For claims 1 and 26, Leibfried teaches preregs containing polysiloxanes. Col. 2, lines 21-31. Leibfried teaches that inorganic fillers are added and that the fillers are added in an amount of up to 95% by weight. Col. 15, lines 24-45. It is noted that Leibfried teaches amounts of fillers in percent by weight and not percent by volume and

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as such this rejection has been made under 102/103. It is the examiner's position that the ranges in percent by weight fall within applicant's claims.

For claims 19-22, Leibfried discloses that the polysiloxane contains a  $\text{SiO}_{4/2}$  unit that is present in an amount that corresponds to 20 mol %. Col. 4, lines 41-56.

Leibfried teaches that the polymers are crosslinked. Col. 2, lines 48-61.

6. Claims 1 and 26 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Beckley et al. (U.S. Patent No. 5,552,466).

For claims 1 and 26, Beckley teaches prepreps containing polysiloxanes and fillers. Col. 6, lines 29-39. Beckley teaches that inorganic fillers are added and that the fillers are added in an amount of 32, 40, and 80 parts by weight. Tables I and II. It is noted that Beckley teaches amounts of fillers in percent by weight and not percent by volume and as such this rejection has been made under 102/103. It is the examiner's position that the ranges in percent by weight fall within applicant's claims.

Claims 1 and 26 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Hashimoto et al. (U.S. Patent No. 6,346,598).

Applicant cannot rely upon the foreign priority papers to overcome this rejection because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15.

For claim 1, Hashimoto teaches teaches containing polysiloxanes. Col. 8, lines 45-55. Hashimoto teaches that inorganic fillers are added and that the fillers are added in an amount of up to 70% by weight where the compositions are used to form prepregs. Col. 13, line 64 through col. 14, line 34. For claim 26, here, Hashimoto teaches that the amount of filler is from 20-50%. It is noted that Hashimoto teaches amounts of fillers in percent by weight and not percent by volume and as such this rejection has been made under 102/103. It is the examiner's position that the ranges in percent by weight fall within applicant's claims.

For claims 4, 23-25, 27, and 28, Hashimoto teaches that metal clad laminates are formed. Col. 14, lines 44-64. These are used to form printed circuit boards. Col. 3, lines 4-10. Although Hashimoto fails to expressly teach the hardness, the examiner's position is that the hardness would be inherent due to the use of the prepregs that are within the limitations of applicant's claims.

For claim 17, in column 18, lines 59-64, Hashimoto teaches that the filler is dispersed in resin solution.

For claim 19, Hashimoto teaches that the composition is cured in col. 12, lines 57-59.

7. Claims 2-18, 23-25, 27, and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Babcock et al. (U.S. Patent No. 5,340,644) as applied to claims 1 and 26 above, and further in view of Takano et al. (EP 0 837 090 A1).

For claims 1 and 26, Babcock teaches the limitations of these claims as set forth above. For claims 7-10, these claims set forth similar limitations as claims 19-22 discussed above. Babcock fails to teach that the fillers used are surface treated. Although Babcock teaches that the prepregs are useful for preparing laminates for printed circuit boards in col. 7, lines 24-25, Babcock does not set forth the particular laminates and circuit boards as claimed.

For claims 2, 3, 5, 6, 15, 16, 17, and 18, Takano teaches that inorganic fillers are treated with coupling agent and silicone polymers in order to improve prepregs produced from resin compositions containing fillers. Page 3, line 39 through page 4, line 3 and lines 50-53. Takano also teaches that solutions are formed containing resin and the fillers. Page 6, lines 7-9.

For claims 4, 11-14, 23-25, 27, and 28, Takano teaches that metal-clad laminates are produced through heat and pressure and then these are used to form printed circuit boards. Page 20, lines 54-58. Although Takano fails to expressly teach the hardness, the examiner's position is that the hardness would be inherent due to the use of the prepregs that are within the limitations of applicant's claims.

Takano and Babcock are analogous art in that they both teach the use of polysiloxanes and fillers to form prepregs for printed circuit boards. It would have been obvious to one of ordinary skill in the art at the time of the invention to surface-treat the inorganic fillers of Babcock by the methods used in Takano. The motivation would have been the improved properties of the resulting prepregs as disclosed by Takano. It would also have been obvious to form the metal-clad laminates and printed circuits of

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the present claims out of the prepregs of Babcock as taught by Takano. The motivation would have been that Babcock teaches that the prepregs produced in the patent are used for this purpose but does not give any direction on how to produce the laminates or printed circuits. One of ordinary skill in the art would have turned to Takano for that information.

8. Claims 2-18, 23-25, 27, and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Leibfried (U.S. Patent No. 5,451,637) as applied to claims 1 and 26 above, and further in view of Takano et al. (EP 0 837 090 A1).

For claims 1 and 26, Leibfried teaches the limitations of these claims as set forth above. For claims 7-10, these claims set forth similar limitations as claims 19-22 discussed above. Leibfried fails to teach that the fillers used are surface treated. Although Leibfried teaches that the prepregs are useful for preparing laminates for printed circuit boards in col. 16, lines 11-44, Leibfried does not set forth the particular laminates and circuit boards as claimed.

For claims 2, 3, 5, 6, 15, 16, 17, and 18, Takano teaches that inorganic fillers are treated with coupling agent and silicone polymers in order to improve prepregs produced from resin compositions containing fillers. Page 3, line 39 through page 4, line 3 and lines 50-53. Takano also teaches that solutions are formed containing resin and the fillers. Page 6, lines 7-9.

For claims 4, 11-14, 23-25, 27, and 28, Takano teaches that metal-clad laminates are produced through heat and pressure and then these are used to form printed circuit boards. Page 20, lines 54-58. Although Takano fails to expressly teach



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the hardness, the examiner's position is that the hardness would be inherent due to the use of the prepregs that are within the limitations of applicant's claims.

Takano and Leibfried are analogous art in that they both teach the use of polysiloxanes and fillers to form prepregs for printed circuit boards. It would have been obvious to one of ordinary skill in the art at the time of the invention to surface-treat the inorganic fillers of Leibfried by the methods used in Takano. The motivation would have been the improved properties of the resulting prepregs as disclosed by Takano. It would also have been obvious to form the metal-clad laminates and printed circuits of the present claims out of the prepregs of Leibfried as taught by Takano. The motivation would have been that Leibfried teaches that the prepregs produced in the patent are used for this purpose but does not give any direction on how to produce the laminates or printed circuits. One of ordinary skill in the art would have turned to Takano for that information.

### ***Conclusion***

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Chi et al. (U.S. Patent No. 4,460,640) and Beuchel et al. (U.S. Patent No. 6,017,995) are cited for general interest.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrey B. Robertson whose telephone number is (571) 272-1092. The examiner can normally be reached on Mon-Fri 7:00-3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy P. Gulakowski can be reached on (571) 272-1302. The fax phone

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number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Jeffrey B. Robertson  
Primary Examiner  
Art Unit 1712

JBR